

INTISARI

Jerawat merupakan kelainan kulit yang sangat umum terjadi. Salah satu penyebab jerawat adalah bakteri *Cutibacterium acnes*. Daun binahong (*Anredera cordifolia* (Ten.) Steenis) mengandung flavonoid dengan aktivitas antibakteri terhadap *C.acnes* sehingga dapat dimanfaatkan sebagai antijerawat. Memperhatikan aspek kenyamanan dan efektivitas, obat antijerawat diformulasi dalam sediaan krim. Penelitian ini bertujuan untuk mengoptimasi rasio konsentrasi emulgator cremophor A6 dan cremophor A25 sehingga dihasilkan sifat fisik dan stabilitas krim (viskositas, daya lekat, dan daya sebar) paling baik, serta mengetahui efektivitasnya dalam menghambat pertumbuhan *C.acnes*.

Daun binahong diekstraksi secara maserasi menggunakan etanol 70%. Krim diformulasi dengan kombinasi emulgator cremophor A6 dan cremophor A25. Formula optimum didapatkan melalui analisis dengan metode *Simplex Lattice Design* (SLD) pada *Design Expert* versi 13. Formula optimum diverifikasi dan diuji stabilitasnya dengan uji sentrifugasi dan uji Q1A (R2). Diuji pula aktivitas antibakteri formula optimum terhadap *C.acnes*.

Didapatkan hasil bahwa cremophor A6 dan cremophor A25 mempengaruhi viskositas, daya lekat, dan daya sebar krim. Didapatkan formula optimum dengan konsentrasi cremophor A6 1,52% dan cremophor A25 0,99% (rasio 7:3). Formula optimum menghasilkan viskositas 6456,67 *cPoise*, daya lekat 0,83 *second*, dan daya sebar 5,46 cm. Melalui uji stabilitas, tidak terjadi pemisahan fase krim setelah disentrifugasi dan stabil selama uji Q1A (R2). Krim formula optimum tidak menghambat pertumbuhan *C.acnes* secara *in vitro* sehingga belum dapat dianggap efektif sebagai antijerawat.

Kata Kunci: Cremophor A6, Cremophor A25, Krim, Binahong.

ABSTRACT

Acne is a very common skin disorder. One of the causes of acne is Cutibacterium acnes bacteria. Binahong leaves (Anredera cordifolia (Ten.) Steenis) contains flavonoids with antibacterial activity against C.acnes, so it can be used as an anti-acne. According to comfortness and effectiveness aspects, anti-acne drugs are formulated in cream preparations. This study aims to optimize the concentration ratio of emulsifier cremophor A6 and cremophor A25 so that the physical properties and stability of the cream (viscosity, adhesion and spreadability) are the best, and to determine its effectiveness in inhibiting the growth of C.acnes.

Binahong leaves were extracted by maceration using 70% ethanol. The cream is formulated with a combination of emulsifiers cremophor A6 and cremophor A25. The optimum formula is obtained through analysis by method Simplex Lattice Design (SLD) on Design Expert 13th version. The optimum formula was verified and tested for stability by centrifugation test and Q1A (R2) test. Also optimum formula is tested for antibacterial activity against C.acnes.

It was found that cremophor A6 and cremophor A25 affect the viscosity, adhesion and spreadability of the cream. The optimum formula was obtained with a concentration of 1.52% cremophor A6 and 0.99% cremophor A25 (7:3 ratio). The optimum formula produces a viscosity of 6456.67 cPoise, adhesiveness 0.83 second, and spreadability of 5.46 cm. Through the stability test, there was no separation of the cream phase after centrifugation and it was stable during the Q1A (R2) test. Optimum formula cream does not inhibit growth of C.acnes in vitro so it is considered not yet effective as an anti-acne.

Keywords: Cremophor A6, Cremophor A25, Cream, Binahong.